REMARKS/ARGUMENTS

Claims 14-16 and 20-25 are pending, with Claims 20-25 having been withdrawn. By this Amendment, Claim 14 is being amended to improve its form. No new matter is involved.

Applicant wishes to express gratitude to the Examiner for agreeing to review this Amendment in draft form prior to filing. A copy of the Amendment was recently faxed to the Examiner, and in a subsequent telephone message from the Examiner to the undersigned, the Examiner stated that the Amendment appeared to be satisfactory, especially with respect to distinguishing the "slits" of the present invention from the concave portions in Yamada.

In Paragraph 5 on page 4 of the Office Action, Claims 14-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,608,556 of Koma in view of U.S. Patent 5,880,797 of Yamada, et al. This rejection is respectfully traversed.

As amended herein, Claim 14 reads as follows:

> "14. A vertically aligned liquid crystal display, comprising:
>
> a vertically aligned liquid crystal layer disposed between a plurality of pixel electrodes and a common electrode, the orientation of said liquid crystal layer being controlled by an electric field, wherein;
>
> said common electrode comprises a plurality of orientation controllers formed in areas corresponding to each of said plurality of pixel electrodes, respectively,
>
> one or more line-shaped slits in which no electrode is present is formed in each of said plurality of pixel electrodes and each of said plurality of pixel electrodes is divided by said one or more slits into two

or more electrode regions, which are electrically connected and arranged proximate to each other with the slit therebetween, and

each of said plurality of orientation controllers associated with a corresponding one of said plurality of pixel electrodes and has portions extending along the direction in which said one or more slits extend, and one of said plurality of orientation controllers is disposed between said two slits or between the corresponding one of said one or more slits and a gap between adjoining pixel electrodes" (emphasis added).

As so amended, Claim 14 clarifies that a "slit" is formed in each of a plurality of pixel electrodes, that the pixel electrode is divided into a plurality of electrode regions, and the electrode regions are arranged proximate to each other with the line-shaped slit therebetween.

On page 6 of the Office Action, it is stated with respect to Applicant's previous arguments that "nowhere in the claim language or the specification is the term 'slit' defined as a cut in the electrode as Applicant presumes. While Applicant supplies a definition from the Oxford English Dictionary that defines 'slit' as a 'cut' or 'incision' or 'aperture', Examiner notes hat none of these definitions distinguishes the concave portion taught in Yamada. In fact, the concave portion of Yamada clearly has 'an absence of an electrode' where the concave portion exists".

The fact that the "slit" is a "cut" in the electrode is clearly shown in Fig. 6 which shows a planar structure of a pixel electrode in which slits 19d and 19e are formed and in Fig. 7 which is a cross sectional view of a structure of the pixel electrode having a shape as shown in Fig. 6 and which shows no layer forming the pixel electrode (31a, 31b, and 31c) in the region of formation of the slit (19d and 19e). This "cut" portion is described in the specification as a "slit".

Although it is argued in the Office Action that the concave portion taught in Yamada cannot be distinguished from the slit, it is clear that the meanings of the terms are different, and, from a technological point of view, the slit in an electrode and a concave portion of an electrode differ from each other.

In the case of a slit, as shown in Fig. 7 of the present application, because no electrode material is present in the formation region of the slit, no voltage is applied to the liquid crystal layer. In the slit portion, no electric field having a sufficient magnitude to tilt the liquid crystal molecules similar to the orientation controller on the side of the common electrode as shown in Fig. 7 is generated (see lines 14-18 of page 10 of the specification), and the liquid crystal is maintained at its vertical orientation. In addition, in the periphery, that is, at a portion around the ends of the slit, electric fields are generated tilted in opposite directions with a boundary at the slit, as shown by a dotted line in Fig. 7. Moreover, the slit formed in the pixel electrode is formed in a "line shape" within the pixel electrode and the electrode regions are arranged proximate to each other with the line-shaped slit therebetween of the invention defined in Claim 14 of the present application. Therefore, by forming the line-shaped slit which is a cut in a pixel electrode in a pixel electrode, it is possible to reliably divide the orientation directions of the liquid crystal molecules with the boundary at the slit.

On the other hand, the electrode having a concave portion described in Yamada is merely a depression and is not a cut in an electrode. In addition, Yamada fails to disclose that the concave portion is formed in a line shape or that the orientation directions are controlled in a line shape. In Yamada, the concave portion of the electrode is described as a contact hole portion in which the transistor at a lower layer and the pixel electrode are connected. It is clear that, because the transistor and the pixel electrode are connected at the concave portion, the electrode

material is present in the concave portion. Therefore, in Yamada, a voltage is applied to the liquid crystal molecules present above the concave portion. Because a voltage is applied, when a vertically aligned liquid crystal molecule is used, the liquid crystal molecule above the concave portion is tilted and the vertical alignment cannot be maintained. Because of the continuity characteristic of the liquid crystal, when the liquid crystal molecules above the formation region of the concave portion are tilted, nearby liquid crystal molecules are also tilted in a direction corresponding to the tilted direction of the liquid crystal molecules above the concave portion. Therefore, in Yamada, the orientation directions of the liquid crystal cannot be divided in a regular manner with a boundary at the concave portion of the pixel electrode.

As described, the concave portion of Yamada and the slit of the present invention differ from each other literally and in technical aspects. Additionally, Yamada fails to disclose the necessity for providing, within a pixel electrode, a region in which no voltage is applied to the liquid crystal.

Neither Koma nor Yamada disclose formation of a line-shaped slit in the pixel electrode to divide the pixel electrode into a plurality of electrode regions. Therefore, the present invention distinguishes patentably over such references and the attempted combination thereof.

In conclusion, Claim 14 as amended is submitted to clearly distinguish patentably over the prior art. Similar comments apply to Claims 15 and 16 which depend from and contain all of the limitations of Claim 14. Therefore, reconsideration and allowance are respectfully requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los

Angeles, California telephone number (213) 337-6846 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: September 22, 2005

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